IN THE CLAIMS:

1-2. (Canceled)

3. (Original) A kit for the synthesis of a polynucleotide, said kit comprising:

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of Pyrococcus furiosus DNA polymerase, Thermotoga martima DNA polymerase, Thermococcus litoralis DNA polymerase, and Pyrococus GB-D DNA polymerase, and

(b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-) Thermococcus literalis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.

4. (Original) A kit according to claim 3, wherein said first and second DNA polymerases are thermostable.

5. (Canceled)

6. (Original) A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising

(a) a first polymerase possessing 3'-5' exonuclease activity selected from the group consisting of Pyrococcus furiosus DNA polymerase, Thermotoga maritima DNA

polymerase, Thermococcus litoralis DNA polymerase, and Pyrococcus GB-D DNA polymerase, and

(b) a second DNA polymerase, wherein said polymerase lacks 3'5 exonuclease activity selected from the group consisting of Thermus aquaticus DNA polymerase, (exo-) Thermococcus litoralis DNA polymerase, (exo-) Pyrococcus furiosus DNA polymerase, and (exo-) Pyrococcus GB-D DNA polymerase.

7. (Original) A method according to claim 6 wherein said first and second DNA polymerases are thermostable.

8. (Original) A method according to claim 6, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.

9. (Original) A method according to claim 7, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.

10. (Original) A method according to claim 8, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.

11. (Original) A kit according to claim 4, wherein said first DNA polymerase is Pyrococcus furiosus DNA polymerase.

12. (Original) A kit according to claim 4, wherein second DNA polymerase is Thermus aquatics DNA polymerase.

13. (Original) A kit according to claim 11, wherein said second DNA polymerase is Thermus aquaticus DNA polymerase.

14-16. (Canceled)

17. (Original) A kit for the synthesis of a polynucleotide, said kit comprising:

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of Archaebacterial DNA polymerases, and

(b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of thermostable DNA polymerases lacking 3'-5' exonuclease activity.

18. (Original) A kit according to claim 3, wherein said *Thermus aquaticus* DNA polymerase is selected from the group consisting of wild-type *Thermus aquaticus* DNA polymerase and N-terminal deleted forms of the same enzyme.

19. (Original) A method of amplifying a polynucleotide sequence, said method comprising: the steps of mixing a composition with a synthesis primer, and a synthesis template, said composition comprising

(a) a first DNA polymerase, wherein said first polymerase possesses 3'-5' exonuclease activity selected from the group consisting of *Archaebacterial* DNA polymerases, and

(b) a second DNA polymerase, wherein said second polymerase lacks 3'-5' exonuclease activity selected from the group consisting of thermostable DNA polymerases lacking 3'-5' exonuclease activity.

20. (Original) A method according to claim 6, wherein said first DNA polymerase comprises *Pyrococcus furiosus* DNA polymerase.

21. (Original) A method of claim 7, wherein said *Thermus aquaticus* DNA polymerase is selected from the group consisting of wild-type *Thermus aquaticus* DNA polymerase and N-terminal deleted forms of the same enzyme.

22. (Original) A method according to claim 7, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

23. (Currently amended) A method according to claim 21, wherein said *Thermus aquaticus* DNA polymerase comprises ~~Klentaq1~~ Klentaq-278 DNA polymerase.

24. (Original) A method according to claim 20, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

25. (Currently amended) A method according to claim 20, wherein said second DNA polymerase comprises ~~Klentaq 1~~ Klentaq-278 DNA polymerase.

26. (Original) A method according to claim 6, wherein said first DNA polymerase comprises Vent DNA polymerase.

27. (Original) A method according to claim 26, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

28. (Currently amended) A method according to claim 26, wherein said second DNA polymerase comprises ~~Klentaq 1~~ Klentaq-278 DNA polymerase.

29. (Original) A kit according to claim 3, wherein said first DNA polymerase comprises *Pyrococcus furiosus* DNA polymerase.

30. (Original) A kit according to claim 3, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

31. (Currently amended) A kit according to claim 18, wherein said *Thermus aquaticus* DNA polymerase comprises ~~Klentaq 1~~ Klentaq-278 DNA polymerase.

32. (Original) A kit according to claim 11, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

33. (Currently amended) A kit according to claim 11, wherein said second DNA polymerase comprises ~~Klentaq 1~~ Klentaq-278 DNA polymerase.

34. (Original) A kit according to claim 3, wherein said first DNA polymerase comprises Vent DNA polymerase.

35. (Original) A kit according to claim 34, wherein said second DNA polymerase comprises *Thermus aquaticus* DNA polymerase.

36. (Currently amended) A kit according to claim 34, wherein said second DNA polymerase comprises ~~Klentaq 1~~ Klentaq-278 DNA polymerase.